



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/511,158	02/23/2000	Hidekazu Nakamoto	500.36898VX1	4119

20457 7590 01/13/2003

ANTONELLI TERRY STOUT AND KRAUS  
SUITE 1800  
1300 NORTH SEVENTEENTH STREET  
ARLINGTON, VA 22209

EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 01/13/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

53

<b>Office Action Summary</b>	<b>Application No.</b> 09/511,158	<b>Applicant(s)</b> NAKAMOTO ET AL.	
	<b>Examiner</b> Jennifer A. Leung	<b>Art Unit</b> 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 3-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-5 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☒ Certified copies of the priority documents have been received in Application No. 09/242,903.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 3-5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.
2. Applicant's election without traverse of Group 1A, claims 1 and 2, in Paper No. 4 is acknowledged.

### ***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/242903, filed on February 25, 1999.

### ***Drawings***

4. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings.

### ***Specification***

5. The disclosure is objected to because of the following informalities:
  - a. Page 1, line 3: -- now U.S. Patent 6,096, 838 -- should be inserted after "1999".
  - b. Page 8, line 26: "strring" should be changed to -- stirring --.
  - c. Page 21, line 11: "focusing" should be changed to -- facing --.
  - d. Page 23, lines 5 and 23, "baskets" should be changed to -- buckets -- as set forth on page 21, line 19.

Art Unit: 1764

- e. Page 25, line 4: "suspendewd" should be changed to -- suspended --.
- f. Page 25, line 28: "herizontal" should be changed to -- horizontal --.
- g. Page 26, line 2: "bype" should be changed to -- type --.
- h. Page 26, line 27: "Votalite" should be changed to -- Volatile --.
- i. Page 27, line 16: "scraping" should be changed to -- scraping --.
- j. Page 27, line 20: "vellel" should be changed to -- vessel --.
- k. Page 29, line 15: "poducing" should be changed to -- producing --.

Appropriate correction is required.

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear as to which end of the vessel constitutes the "one end" (lines 5, 18, 20) and the "other end" (lines 6, 19, 21, 22). It is suggested by the Examiner to clarify the structural relationship with respect to the positioning of the inlet or outlet. Likewise in claim 2, lines 5, 6, 17, 18-19, 20, 21 and 22. Furthermore, it is unclear as to the structural limitation the applicants are attempting to recite by, "the scraping plate at the other end is discrete between the

Art Unit: 1764

adjacent hollow disks.” (lines 21-22). Also, it is unclear as to the relationship of “the scraping plate” (line 21) to the “scraping plates” set forth in line 12. Furthermore, it is unclear as to where “the distance between adjacent hollow disks is larger at the one end of the longitudinal direction of the vessel than at the other end” (claim 1, lines 17-19; claim 2, lines 16-19) and where “the inner diameter of the hollow disks is larger at the one end in the longitudinal direction of the vessel than at the other end” (claim 1, lines 19-21; claim 2, lines 19-21) is disclosed in the specification and drawings.

In claim 2, “thin” (lines 21, 22) is considered vague and indefinite, as it is a relative term.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al. (U.S. 5,599,507) in view of Rothert et al. (U.S. 3,761,059) and Greenburg et al. (U.S. 3,728,083).

With respect to claim 1, Shaw et al. disclose a reactor **20** comprising:

(a) a substantially horizontal cylindrical vessel **22** provided with an inlet **36, 38** and an outlet **40, 42** for a liquid feed, respectively, at the upper part at one end therefore and at the lower part at the other end thereof, in the longitudinal direction thereof, and with an outlet **44** for volatile matters at the upper part thereof (FIG. 1; column 5, lines 38-53);

(b) a stirring rotor **32** provided with a plurality of hollow disks **56, 58** as connected to one another in the longitudinal direction thereof within the vessel (FIG. 1, 2; column 6, lines 4-18);

(c) further provided with scraping plates **62** each between adjacent hollow disks for scraping the liquid feed attached to the inside wall of the vessel (FIG. 3, 4A-4H, 7A-7F; column 6, lines 4-18), the stirring rotor being without any rotating shaft at the position of a rotating center axis (column 10, lines 35-43),

wherein the distance between adjacent hollow disks may be larger at the one end of the longitudinal direction of the vessel than at the other end, and the inner diameter of the hollow disks may larger at the one end in the longitudinal direction of the vessel than at the other end (column 7, lines 4 - column 8, line 66; FIG. 1, 2).

Although Shaw et al. are silent as to the inlet **36, 38** being located at the lower part at the one end of the vessel, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to position the inlet at the lower part of the vessel, depending on the intended use of the apparatus and absent showing any unexpected results. Also, the placement of the inlet at such location is known in the art, as evidenced by the substantially

Art Unit: 1764

similar reactor of Rothert et al. (inlet **22**, FIG. 1). In any event, shifting location of parts was held to have been obvious. *In re Japikse*, 181 F.2d 1019, 1023, 86 USPQ 70, 73 (CCPA 1950).

Shaw et al. are silent as to whether the scraping plate **62** at the other end, i.e. the end comprising the liquid at high viscosity, may be discrete between the adjacent hollow disks **56**, **58**. However, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to modify the scraping plate of Shaw et al. such that it were discrete, since the use of discrete scraping plates in applications of high viscosity liquid agitation is conventionally known in the art, as evidenced by Greenburg et al. (projections **5**, **7**, **9** and **11**; FIG. 1-5). Greenburg et al. (column 1, lines 61-64) teach that such projections allow continuous filming and flowing action of materials having viscosities ranging from 1,000 to 100,000 poises (100 to 10,000 Pas).

With respect to claim 2, the same comments with respect to claim 1 above, as relevant, apply. Furthermore, Shaw et al. disclose a hollow thin plate **60** provided between the adjacent hollow disks **56**, **58** at the one end, the hollow thin plate **60** having a smaller outer diameter than that of the adjacent hollow disks (column 9, lines 55-58; FIG. 3).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 1764

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-2 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-11 of U.S. Patent No. 6,096,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reference patent claims substantially the reactor as recited in the instant claims, comprising:

(a) a substantially horizontal cylindrical vessel provided with an inlet and an outlet for a liquid feed, at opposing ends and at the lower part thereof, and an outlet for volatile matter at the upper part thereof (column 14, lines 27-31, 51-55);

(b) a stirring rotor provided with a plurality of hollow disks (column 14, lines 31-34, 55-58);

(c) scraping plates each between adjacent hollow disks (column 14, lines 34-37, 58-61);

wherein the stirring rotor is without any rotating shaft at its rotating center axis (column 14, lines 37-38, 61-62); the distance between adjacent hollow disks is larger at one end with respect to the other (column 14, lines 40-43, 64-67); the inner diameter of the hollow disks is larger at one end with respect to the other (column 14, lines 42-45, 67 - column 15, line 2); the scraping plates at one end is discrete between the adjacent hollow disks (column 14, lines 45-46); and the hollow thin plate has a smaller outer diameter than the adjacent hollow disks (column 15, lines 3-5).



Art Unit: 1764

*Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ryder '838 is presented to illustrate the state of the art.

\* \* \*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is 703-305-4951.

The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jennifer A. Leung  
January 8, 2003

JAL

Hien Tran

**HIEN TRAN  
PRIMARY EXAMINER**